S4D4C

USING SCIENCE DIPLOMACY
FOR ADDRESSING GLOBAL CHALLENGES

POLICY BRIEF #2
JANUARY 2020

Towards effective science diplomacy practice

Executive Summary

Grand societal challenges require collective action within and across national borders. Effective action is expected from Europe and it requires targeted inter-governmental and diplomatic efforts and the mobilisation of appropriate scientific knowledge. Science Diplomacy is a promising mechanism to address these grand societal challenges. We understand science diplomacy generally as collaborations between stakeholders from science, policy and diplomacy, which involve various governmental or diplomatic organisations as well as non-governmental scientific organisations. The complexity arising from the existing variety of mechanisms and stakeholders precludes a clear-cut definition of who should 'do' science diplomacy in what way. And many stakeholders that could be labelled 'science diplomacy organisation' would not do so themselves. This presents challenges for organising the governance of science diplomacy. We suggest here that governing mechanisms for science diplomacy in Europe must observe four premises to be effective. These premises include (a) grand societal challenges require both diplomatic efforts and science-based knowledge, (b) science-based knowledge production is diverse and evolving, (c) diplomacy means reconciling a variety of interests, and (d) Science Diplomacy requires combined science and diplomacy literacy. These premises set the stage for the development of governance mechanisms for science diplomacy. Taken seriously, they lead to governance practices that do not pre-define what science diplomacy is, but give interested stakeholders the guidance they need to develop effective science diplomacy mechanisms themselves. This will be presented in a later policy recommendation brief.

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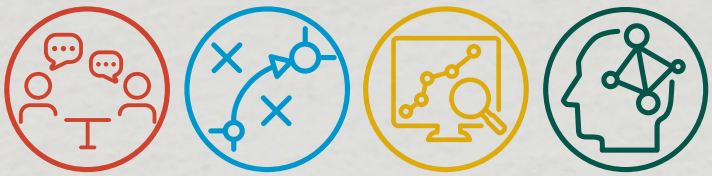

Networks and dialogue | Governance framework | Knowledge resources | Trainings for science diplomats

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Introduction

Grand societal challenges and the Sustainable Development Goals are complex and multi-faceted. They typically involve both socio-technical and political aspects as well as require constructive, productive and anticipatory stakeholder engagement between and across policy levels (Kuhlmann and Rip 2018). Grand societal challenges such as climate change, cyber-crime, or AIDS require collective action from national governments, foreign ministries and services, research and innovation ministries, educational and research institutions, national and non-governmental science agencies, supra- and international institutions, science-policy intermediaries, knowledge brokers and organisations dedicated to addressing grand societal challenges, to name just a few.

In this context, Europe is expected and determined to act for the benefit of people globally. Effective European action requires, inter alia, targeted intergovernmental and diplomatic efforts and the mobilization of appropriate scientific knowledge. Failure to better connect European diplomacy and science would come at potentially high societal costs, such as stagnating economic development or reduced public welfare.

The project context of S4D4C – "Using science for/in diplomacy for addressing grand societal challenges"

"In the current political and societal landscape, the needs, stakes and opportunities pertaining to science diplomacy have increased. However, communication between the scientific and diplomatic communities is not straightforward. There is potential for better harnessing European science and science cooperation for European science diplomacy and foreign policy goals, both at EU and EU Member State-level. Not only can new approaches to scientific advice in EU foreign policy benefit from advances in research, but science diplomats can also harness new ways of carrying out research that offer opportunities for foreign policy impact. The overall objective of S4D4C is to support current and future European science diplomacy for the benefit of European capacities, EU foreign policy goals and especially the development of solutions for grand societal challenges. S4D4C has shaped its partnership so that it can effectively address this objective from an academic as well as a practitioners' perspective." (see also https://www.s4d4c.eu/about/)

The S4D4C project consortium has produced a set of documents, including a science diplomacy needs assessment survey (Degelsegger-Márquez, Flink, and Rungius 2019), nine empirical case studies (S4D4C 2019), and a science diplomacy state-of-the-art report (Rungius, Flink, and Degelsegger-Márquez 2018). Also, the team organised two 'co-creation workshops' with top-level practitioners from science, foreign policy, and science policy.

In the last few decades, science diplomacy has emerged as a promising mechanism that captures the benefits of diplomacy and science for tackling grand societal challenges. It suggests that these two communities can do so more effectively when working together. Still, although various attempts to define science diplomacy were made (cf. The Royal Society 2010; Gluckman et al. 2017), the concept remains an elusive one, due to the diversity and fluidity of the concerned activities, practices and mechanisms. Despite bearing its typical characteristics, some processes, such as various kinds of exchange of scientists between research institutions, would not even be labelled science diplomacy (Soler, Robinson, and Wang 2017).

Nevertheless, in general, science diplomacy involves a collaboration between stakeholders working in the science community, the diplomacy community and the policy community. These collaborations pursue national, cross-border or global objectives (Gluckman et al. 2017). Other than in traditional diplomacy, science diplomacy is often characterised by the involvement of stakeholders, e.g. the American Association for the Advancement of Science (AAAS) or the European Cooperation in Science & Technology (COST), from sub-national or non-governmental organisations. Besides these organisations, countries such as the United States, the United Kingdom, France or Switzerland have already institutionalised science diplomacy in dedicated governmental science diplomacy networks (Flink and Schreiterer 2010). Other stakeholders such as the EU with its dedicated European External Action Service (EEAS) are also keen on using science diplomacy processes and mechanisms for its foreign policy objectives. Thus, by now, there are already many organisations, governmental agencies and individuals from the diplomatic community, the scientific community and on the boundary of 'diplomacy' and 'science' that 'do' science diplomacy.

This variety in stakeholders and organisational forms has two consequences. First, it explains the difficulty of capturing science diplomacy with well-defined actors or mechanisms. For example, pinpointing it as a governmental diplomacy process excludes all those non-governmental organisations that have in the past worked on issues crossing the boundary between the science and diplomacy communities. Conversely, fixing specific mechanisms, e.g. scientists' exchanges or 'evidence-based' diplomacy, as the core of what constitutes science diplomacy ignores all those science diplomacy processes that are either implicit or tailor-made for specific contexts. Second, although there may be individuals who identify themselves as science diplomats, a clearly distinguishable profession has not yet emerged. Although we don't necessarily advocate the creation of such a specific profession, there are certain skills and capabilities that organisations or individuals need, if they want to engage in effective science diplomacy.

Four Premises

The S4D4C project consortium set out to tackle the challenge, which this complex situation with its manifold actors, activities, processes and mechanisms presents, because it understands science diplomacy as a potentially effective means to deal with grand societal challenges. S4D4C recognises the necessity of formulating practices that facilitate the governance of science diplomacy activities. We understand governance as those processes by which science diplomacy stakeholders make decisions to which all can commit themselves in the light of their conflicting interests (Kuhlmann 2001). Consequently, one of S4D4C's core efforts is to develop governing practices that enable actors interested in science diplomacy to enter into effective science diplomacy activities geared towards tackling grand societal challenges. This policy brief represents a first step towards those governing practices. It focuses on four premises that need to be met for the practices to become more effective. The four premises follow an internal logic. The first premise deals with the nature of grand societal challenges. The second and third discuss the characteristics of science and diplomacy by themselves, respectively. The fourth premise describes how the first three need to come together to enable science diplomacy. The premises are:

Premise #1 Grand societal challenges require diplomatic efforts and science-based knowledge

Premise #2 Science-based knowledge production is diverse and evolving

Premise #3 Diplomacy means reconciling a variety of interests

Premise #4 Science Diplomacy requires science and diplomacy literacy

These premises should be understood as framework conditions for effective science diplomacy rather than as an explicit manual. The governing practices for effective science diplomacy activities themselves will be laid out in a later policy recommendations brief.

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Premise #1: Grand societal challenges require diplomatic efforts and science-based knowledge

Grand societal challenges are complex, multi-faceted phenomena. Due to the globalisation and fluidisation of socio-economic ties across the world, these challenges have become all-encompassing and concern everyone. For example, the effects of rising global temperatures due to climate change will be felt by us all. This also means that impacts and responsibilities are not anymore to be found on a national scale. Rather, their transnational nature requires constructive engagement of stakeholders across borders and between policy levels. Efforts on the level of international policy on the matter of climate change already date back decades with varying degrees of success, but with more and more visible effects on (sub-)national levels. However, this does not concern policymakers alone. The scientific knowledge necessary to (begin to) tackle these grand societal challenges is also located in international academic networks. The rigorous and extensive scientific process of the UN Intergovernmental Panel on Climate Change involving multidisciplinary scholars from all over the world testifies to this. The governance structures that have been constructed under the UN Framework Convention on Climate Change and the way in which scientists have become intertwined in them exemplifies the necessity of collaboration between the diplomatic, scientific and policy community. It is truly a collective process spanning the boundaries of those communities with spill-overs into other policy domains and sectors.

Example Premise #1

The initiatives which the EU takes in the field of sustainable land management are a case in point. The delicate interplay of land degradation, desertification and drought has consequences for regional development. These processes are related to climate science, soil science, meteorology, biology and agricultural sciences. However, results from those disciplines cannot simply be transferred to end users. Successful application of scientific knowledge by end users requires thorough interaction and consideration of their needs. Examples of the EU's engagement that exceed its participation in United Nations organisations includes the "Great Green Wall Initiative" or the "Front Local Environmental pour une Union Verte". In these initiatives, EU representatives collaborate with African officials.
(https://ec.europa.eu/europeaid/sites/devco/files/leaflet_devco_c2_degradation-20161110-digital_version_2.pdf)

Premise #2: Science-based knowledge production is diverse and evolving

Science diplomacy depends on the availability and trustworthiness of science-based knowledge. The availability of science-based knowledge varies across topics, scientific disciplines and countries. Here, existence and access of science-based knowledge have to be distinguished. First, some scientific questions are already well-known for a long time, but the answers do not yet exist as other questions had to be answered first, e.g. the Millennium Problems stated by the Clay Mathematics Institute (https://www.claymath.org/millennium-problems). Second, science-based knowledge is publicly available only to varying degrees. Hence, diplomats and policymakers need to ascertain that appropriate science-based knowledge, experts and knowledge infrastructures, such as the S4D4C online knowledge resources , are accessible (https://www.s4d4c.eu/online-knowledge-resources/). There are also geographical differences in the availability and accessibility of science-based knowledge, as some countries have invested in specific kinds of research. Political choices of prioritising certain disciplines through science funding has driven the geographical availability and accessibility of knowledge. The development of national innovation systems is a case in point. Additionally, anticipating future developments in the field of science, technology and innovation is a necessary ability to have for diplomats and policymakers. Only once such developments are anticipated, can preparations such as organising cross-border collaboration and prioritisation of funding be started.

Furthermore, what constitutes trustworthy science-based knowledge differs from scientific discipline to scientific discipline. The methods by which data are generated, by which their quality is evaluated and the way they are analysed and interpreted underlie scientific worldviews that can differ between but even within disciplines. This also means that a 'standard' science does not exist.

Any effective science diplomacy strategy has to make sure that science-based knowledge for the issue at hand is accessible and that there is capacity to adequately interpret and translate this knowledge. Achieving these objectives may need to be preceded by diplomatic activities to tap into science-based knowledge resources elsewhere.

Example Premise #2

Within scientific fields, especially in the social sciences, perspectives on the principles of the field can differ considerably. For example, the 2013 publication by Thomas Piketty on "Capital in the 21st Century" has brought out the differences in the economics field. Piketty's publication has triggered a fundamental discussion among progressive and neo-classical economists about which indicators are important in appraising the economy and how its performance should be measured.

Open Science exemplifies the attempts of the science community to make more publicly funded science publicly available. Throughout Europe and in several EU Member States, Open Science begins to play a bigger role in the funding of science projects and the recognition of scientists.
(https://www.s4d4c.eu/knowledge_resource/goals-of-research-and-innovation-policy/)

Premise #3: Diplomacy means reconciling a variety of interests

Just like science, diplomacy has its own rules of engagement and any actor interested in science diplomacy must take these into account. Different countries have different political goals and interests. Becoming accustomed to the local traditions and culture is paramount to effective diplomacy. Diplomats are mediators between governments, but also have less neutral positions in the absence of instructions or policy (Adler-Nissen 2015). In the face of grand societal challenges, their task may be even more demanding as more and more non-governmental organisations are pushing onto the stage. Diplomats need practices that enable them to bring together and reconcile the increasing variety of interests, which they can achieve, for example through science advisors or science advice mechanisms. This is a precondition if they want to realise collective action that addresses grand societal challenges. To do so, science diplomacy strategies need to contain practices that put actors interested in science diplomacy in a position to reflect on each others' norms, values, goals etc. to find common ground in a constructive way.

Example Premise #3

Science Advice mechanisms enable diplomats and policymakers to discuss political topics in an informed, evidence-based manner. This gives them the opportunity to discuss with scientists and non-governmental organisations to get an overview of a specific topic and the existing opinions about it. Science advice mechanisms are institutionalised in organisations and policy processes on several policy levels. There is the International Network for Government Science Advice (INGSA) and the European Academies Science Advice Council (EASAC). EU governance has its own Science Advice Mechanism (SAM).
(https://www.s4d4c.eu/knowledge_resource/ingsa/)

„Science Diplomacy strategies need to contain practices that put actors interested in science diplomacy in a position to reflect on each others' norms, values, goals etc. to find common ground in a constructive way."

Premise #4: Science Diplomacy requires science and diplomacy literacy

Premises #1-3 demonstrate that science diplomacy is not simply a matter of putting actors interested in science diplomacy in the same room and assuming they will solve grand societal challenges. Addressing grand societal challenges requires more than 'standard' science and more than 'traditional' diplomacy. The complexity of grand societal challenges requires a deep understanding of the scientific dimension as well as the geopolitical dimension of the issue at hand. It requires both 'transformative science' and a 'knowledge-based diplomacy'. It is probable, that neither of the communities can solve the challenges we face on their own. Embracing this means that actors interested in addressing grand societal challenges need to become versed in science diplomacy practice, in which they are 'literate' in international relations as well as science. Actors with these intentions need to be aware of the level at which action needs to be taken, who needs to be involved and what diplomatic and scientific needs, challenges and opportunities are at stake. Actors interested in science diplomacy, thus, need practices that enable them to answer these questions and become literate in both science and diplomacy. This entails new rationales, practices and norms, but also dedicated modes of governance, knowledge platforms and training capacities.

Example Premise #4

The production and consumption of textiles is a global problem still not always seen as such. Traditional fibres such as cotton have an enormous water footprint and its conventional farming and irrigation are difficult to make sustainable. Substitutes such as polyester or viscose have an even more devastating environmental footprint. What is more, with their use, washing and disposal, plastic particles ranging from micrometres to whole articles of clothing end up in the environment. Except for wear and tear, most plastics barely decompose or can be recycled. The scientific disciplines that are needed to address this issue are widespread and do not often work together. We are talking about materials scientists, agricultural scientists, ecologists, social scientists in the fields of innovation or sustainable production and consumption, supply chain experts, policy scientists and legal scholars. Bringing these fields together for a task that is not even recognised in all its dimensions remains demanding. The same goes for the policy arena, where textile production is mainly seen as belonging in the labour policy domain. The scientific complexity and global economic and political dimensions make finding alternative ways of production and transforming consumption patterns an exemplar suitable to be tackled with a large-scale science diplomacy process. Stakeholders in such a process would need to reflect on what actually the problem is, which knowledge is necessary to solve it and through which governance practices this could be achieved. (https://www.faz.net/aktuell/wissen/erde-klima/das-weltklima-hat-ein-textil-problem-recycling-hilft-kaum-16565225.html?printPagedArticle=true#pageIndex_3)

Outlook: Facilitating science diplomacy practice

Given the complexity of grand societal challenges that need to be addressed (Premise #1), the internal logics of science (Premise #2) and of diplomacy (Premise #3), effective science diplomacy practices rely on actors who are literate in both domains (Premise #4). As an outsider to each community, it is often difficult to understand the stakes and interests at play in either community. Thus, with the complexity of current and future policy challenges, actors interested in science diplomacy need to be thoroughly trained in the ins and outs of both foreign policy, science and innovation policy, as well as topic-related science dynamics. A footing in one of these fields needs to be complemented with deep immersion in the intricacies of the others. For actors interested in science diplomacy, neither of the fields can be simply observed as just another part of the job.

Any attempt at facilitating science diplomacy practice that addresses grand societal challenges must enable actors (a) to reflect jointly on the stakes in their respective domains, (b) to access relevant science-based knowledge infrastructures and experts and (c) to suggest forms of organising the intended science diplomacy activity. This challenge is captured in a forthcoming set of governing practices, which S4D4C is developing. They will be presented in a later policy recommendations brief.

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